

From wang!elf.wang.com!ucsd.edu!info-hams-relay Sun Apr 7 09:50:55 1991 remote  
from tosspot  
Received: by tosspot (1.64/waf)  
via UUCP; Mon, 08 Apr 91 21:36:47 EST  
for lee  
Received: from somewhere by elf.wang.com id aa21198; Sun, 7 Apr 91 9:50:51 GMT  
Received: from ucsd.edu by relay1.UU.NET with SMTP  
(5.61/UUNET-shadow-mx) id AA15885; Sun, 7 Apr 91 05:06:10 -0400  
Received: by ucsd.edu; id AA17217  
sendmail 5.64/UCSD-2.1-sun  
Sat, 6 Apr 91 21:50:26 -0800 for nixbur!schroeder.pad  
Received: by ucsd.edu; id AA17198  
sendmail 5.64/UCSD-2.1-sun  
Sat, 6 Apr 91 21:50:18 -0800 for /usr/lib/sendmail -oc -odb -oQ/var/spool/  
lqueue -oi -finfo-hams-relay info-hams-list  
Message-Id: <9104070550.AA17198@ucsd.edu>  
Date: Sat, 6 Apr 91 21:50:16 PST  
From: Info-Hams Mailing List and Newsgroup <info-hams-relay@ucsd.edu>  
Reply-To: Info-Hams@ucsd.edu  
Subject: Info-Hams Digest V91 #276  
To: Info-Hams@ucsd.edu

Info-Hams Digest                      Sat, 6 Apr 91                      Volume 91 : Issue 276

Today's Topics:

2m thru-glass ant question  
Antenna Matching Gedanken Experiment  
ATV: AM or FM  
HF rig names?  
Icom R-1 Undocumented features  
Info-Hams Digest V91 #267  
Licensing Philosophy?  
P40V  
PROPAGATION FORECAST BULLETIN 12 ARLP012  
Specs for Boschert PWR Supply  
The first No-Code Ham is.....(DRUMROLL)..... (2 msgs)

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

-----  
Date: 5 Apr 91 21:45:18 GMT  
From: hpl-opus!hpnmdla!alanb@hplabs.hpl.hp.com  
Subject: 2m thru-glass ant question  
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, jmccombi@bbn.com (John McCombie) writes:

>A while back I posted an article about thru-the-glass 2m antennas for  
>one's car. I bought an Antenna Specialists antenna at the local ham  
>radio emporium, installed it and it works wonderfully.

>... The antenna I bought  
>doesn't attach anything to the chassis of the car--the coax attaches  
>to a small box on the inside of the car which electrically couples to  
>the antenna, but there are no connections to the chassis at all.  
>[BTW, I'm running a HT off of batteries, so there is no connection to  
>the chassis through, say, the -ve power connection.]

>Why and/or how does my antenna work?

I think the answer is that a bent coathanger will work as an antenna too.  
If the repeater is good and strong at your location, it may appear to work  
fine. The only way to tell is to do a side-by-side comparison with an  
antenna of known gain.

With no ground, the coax shield is acting as your "ground plane."  
I expect there is considerable radiation from the shield inside the car.  
You will probably get a more consistent omni-directional pattern with  
the shield grounded to the car body right at the window.

In my opinion, thru-glass antennas are compromise antennas. But the  
difference between a "good" antenna and a compromise antenna is probably  
only 3-10 dB, which would be barely noticed in normal operation, so  
the convenience of the thru-glass antenna may well be justified.

AL N1AL

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Date: 5 Apr 91 21:38:25 GMT  
From: hpl-opus!hpnmdla!alanb@hplabs.hpl.hp.com  
Subject: Antenna Matching Gedanken Experiment  
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, rwa@cs.athabascau.ca (Ross Alexander) writes:

>Say one has a rig driving a chunk of (lossless) coax, said coax being  
>terminated in either a dead short or an open - the intent is to get  
>perfect reflection. OK, so the SWR is infinite. All the power stays  
>in the transmitter. Things get hot!

Let's say you add an antenna tuner to the shorted coax and manage to  
tune it to 50 ohms. The transmitter will be perfectly happy. What is  
happening is the power is being dissipated in the loss resistance of  
the coax and tuner. With a more reasonable load, say 3:1 SWR, the tuner  
losses should be low, and you get nearly full power to the antenna.

Tube-type transmitters have an adjustable matching network built into  
the output. There won't likely be enough adjustment range to allow  
proper loading into a shorted coax. But say your antenna has a 3:1 SWR,  
and the matching network has enough range to load up properly into this  
antenna. This means the final amplifier tube is "seeing" its proper  
load impedance. The tube is perfectly happy. There may be more  
dissipation in the matching coil due to higher circulating currents,  
and there will be more loss in the feedline than with a 50-ohm antenna,  
but if these losses are low enough to begin with, you may have a perfectly  
viable system.

AL N1AL

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Date: 6 Apr 91 18:44:00 GMT  
From: swrinde!zaphod.mps.ohio-state.edu!pacific.mps.ohio-state.edu!linac!att!  
emory!wa4mei!ke4zv!gary@ucsd.edu  
Subject: ATV: AM or FM  
To: info-hams@ucsd.edu

In article <1991Apr3.222646.9527@ux1.cso.uiuc.edu> phil@ux1.cso.uiuc.edu (Phil  
Howard KA9WGN) writes:

>  
>Not necessarily. Given that the lower frequency portions of the video  
>get more benefit from a constant deviation, being as the modulation index  
>is much higher, I'd expect that the high average power level is effectively  
>being dedicated unevenly, favoring the lower frequencies.

But this is very desirable for video. Most of the important parts of the  
signal are at the low frequencies. The vital sync signals and the gross  
picture features are low frequency. The very fine picture detail is at  
the highest end of the video frequency spectrum. Noise here is not very  
noticeable. In fact we often will deliberately introduce some high frequency  
noise into a picture during the production process to mask some picture  
defect. It should be noted that AM modulation is designed to favor the  
sync components of the video. Peak modulation is at sync tip, black is

at 70% and peak white is at 12.5%. Fine details in the picture tend not to have a very high depth of modulation and hover near the peak white value. Therefore AM TV also favors the lower frequency components by design. One exception to this low depth of modulation for high frequency components occurs in some character generators. They produce very high rise time, very deeply modulated edges on the lettering. In AM signals this often results in overshoots beyond the 12.5% point all the way down to the zero point that will introduce "sync buzz" in the intercarrier audio. In FM signals this results in the familiar black sparklies on picture edges. Many stations have resorted to low pass filters on their character generators to remove this annoyance. The filter slows the risetime of the edges and reduces their depth of modulation. The production department hates this because it makes keying the signal harder. So some stations filter their video at the transmitter input. Engineers hate this because it makes \*all\* video look softer than it should.

Gary KE4ZV

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Date: 7 Apr 91 02:29:29 GMT  
From: maverick.ksu.ksu.edu!mac@uunet.uu.net  
Subject: HF rig names?  
To: info-hams@ucsd.edu

In <2696@ke4zv.UUCP> gary@ke4zv.UUCP (Gary Coffman) writes:  
>In article <41087@genrad.UUCP> dls@genrad.com (Diana L. Syriac) writes:  
>>.... Do hams use a transceiver AND a separate receiver?

>.... A few top of the line transceivers offer dual receive so even  
>this excuse to have separates is coming to an end.

Hmmnn. I wasn't aware that the old (1975?) TenTec Triton IV was  
ever considered "top of the line" even back then. But with an  
(optional) external VFO it has dual-frequency receive.

--Myron.

--

# Myron A. Calhoun, Ph.D. E.E.; Associate Professor (913) 539-4448 home  
# INTERNET: mac@cis.ksu.edu (129.130.10.2) 532-6350 work  
# UUCP: ...rutgers!ksuvax1!harry!mac 532-7353 fax  
# AT&T Mail: attmail!ksuvax1!mac WOPBV @ KOVAY.KS.USA.NA

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Date: 7 Apr 91 03:51:10 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Icom R-1 Undocumented features  
To: info-hams@ucsd.edu

The incredible Icom R-1 scanner is rumored to have a few undocumented features. Supposedly some key sequences can disable AGC as well as a few other tricks. Has anyone managed to figure these out yet ? Any information would be greatly appreciated.

-Wayne

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Date: 7 Apr 91 04:32:00 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Info-Hams Digest V91 #267  
To: info-hams@ucsd.edu

> I'm interested in the state-of-the-art computer tools for  
> prediction of propagation for HF via the ionosphere. I suppose  
> this would include through at least 6 m, and possibly up to  
> 100 MHz.  
> The thing that I have against these programs is that they use  
> solar flux alone. As we've all seen lately, that's only half  
> of the story.

Unfortunately, the truth is that solar flux may be \*none\* of the story with regard to 6M long skip. In order to predict a from b successfully, there has to be a correlation between a and b. Smoothed sun spot numbers are averaged over six months. That means you don't get a number for this month until six months from now. Correlates with a lot of things, but not useful in real time. Ottawa measures the solar flux (radio noise) at 2800 Mhz daily. These are the numbers that WWV broadcasts. The result is a real-time number that correlates roughly with the SSN (smoothed sunspot nr). However, it appears that the emission mechanisms which produce the 2800 Mhz noise are poorly correlated with the radiation which ionizes the ionosphere w/re 6M and hence do not effectively predict 6M openings. (My personal observation is that the correlation is not great even on 10M.)

This is why any good prediction pgm doesn't give you values above 30Mhz -- the author knows they would be meaningless. I suggest you see the article by Shel Remington, NI6E/KH6, in the April issue of DX Magazine "Solar Flux and Six Meters.

My favorite propagation pgm is W6EL's Miniprop. The author, Shel (another one), is known for his saying "Muf is not enuf". This pgm has helped me shag a couple of rare ones by telling me things other propagation pgms didn't.

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Date: 5 Apr 91 17:34:30 GMT  
From: hpfcso!hpfcdc!perry@hplabs.hpl.hp.com  
Subject: Licensing Philosophy?  
To: info-hams@ucsd.edu

>Then he made two more points: with the state of modern gear, one or two can  
>fix their own rigs without a factory, and the rigs do everything. The  
>other point was that the government doesn't restrict the public's access to  
>operating motor vehicles to those who demonstrate basic mechanic's skills.

Point one ignores several realities. Three counterpoints. 1. Old gear exists, which is serviceable without a high degree of technical expertise. 2. New gear is simply more complicated, but not impossible to service and uses many old principles. There are only so many ways to make an oscillator. 3. Modern gear still uses low-tech peripherals, like keyers, filters, linear amplifiers, antenna couplers, and antennas, which are within the realm of construction possibilities.

Point two has been discussed before. Ham radios have a lot of knobs and blinkenlights, both inside and outside the cabinet, which are beyond the ability of the average automobile driver to properly use. Hams are allowed to modify their equipment in ways that would make their gear a hazard to themselves and others.

Many non-hams only see the "operator" function of the hobby. They need to be gently reminded that many of us operate because it's the only way to test our homebrew equipment. I suppose even testers (The Ultimate Operators) can be thought of as a gigantic test team for the major equipment manufacturers.

Perry Scott / KF0CA  
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Date: 3 Apr 91 23:09:37 GMT  
From: hpda!hpcupt1!holly@hplabs.hpl.hp.com  
Subject: P40V  
To: info-hams@ucsd.edu

Actually P40V is not the NCCC. P40V is owned by Carl Cook who happens to be a member of NCCC. But NCCC does have many top operators in its membership.

Jim, WA6SDM  
holly@hpcupt1.cup.hp.com

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Date: 6 Apr 91 23:30:34 GMT  
From: sdd.hp.com!samsung!umich!sharkey!nstar!towers!bluemoon!n8emr!@ucsd.edu  
Subject: PROPAGATION FORECAST BULLETIN 12 ARLP012  
To: info-hams@ucsd.edu

=====  
| Automatic relayed from packet radio via |  
| N8EMR's Ham BBS, 614-895-2553 1200/2400/9600/V.32/PEP/MNP5 |  
=====

ZCZC AP68  
QST DE W1AW  
PROPAGATION FORECAST BULLETIN 12 ARLP012  
FROM TAD COOK, KT7H, SEATTLE, WA  
APRIL 6, 1991  
RELAYED BY KB8NW/OBS & BARF-80 BBS  
TO ALL RADIO AMATEURS

The solar flux stayed under 200 over the past week, but increasing flare activity caused more of the unstable conditions that we have seen in past weeks. Although not as disturbed as last week's conditions, K indices of five have been reported on every day since April 1.

Look for more unsettled to active geomagnetic conditions, gradually tapering off with a declining A index and rising solar flux. The flux value should rise from 200 to around 225 over the next week, and the A index may fall off to about 10. The solar flux is expected to peak for the short term around April 19 or 20.

Students of HF radio propagation will be interested to read an article on forecasting by W3EP and N8LSQ in April QST, which discusses some of the ways radio amateurs can use publicly available solar data to do their own short and mid term propagation forecasts.

American sunspot numbers for March 21 through 27 were 167, 167, 177, 138, 145, 151 and 150, with a mean figure of 156.4. For the week March 28 through April 3, they were 121, 111, 95, 87, 82, 99 and 108, with a mean of 100.4.

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Date: 6 Apr 91 23:45:49 GMT  
From: fernwood!uupsi!cci632!dsr@decwrl.dec.com  
Subject: Specs for Boschert PWR Supply

To: info-hams@ucsd.edu

Hello All...

My printer's power supply died. I checked my local sources and can't get any kind of specs for the supply. The manufacturer is no longer listed in Thomas register, and the phone number printed on the unit is no longer assigned. I'm not looking to fix it, just replace the supply with a new one with the same voltages and amps. If anyone has an old catalog and can do a quick lookup for the power out specs, drop me a line please.

BOSCHERT model #XL200 - 3603/4603 300Watt 120 v in, (+12, +5, ?? out).

Any help, would be greatly appreciated. Please E-mail to dsr@cci.com.

Thnx,

Dave Roland

-----  
Date: 7 Apr 91 00:23:41 GMT

From: sdd.hp.com!zaphod.mps.ohio-state.edu!ub!csn!boulder!tigger!bear@ucsd.edu

Subject: The first No-Code Ham is.....(DRUMROLL).....

To: info-hams@ucsd.edu

In article <8819@gollum.twg.com> sawyer@twg.com (Bruce B. Sawyer) writes:

>In article <11806.27f641a1@zeus.unomaha.edu> acmnews@zeus.unomaha.edu (Paul W. Schleck KD3FU) writes:

>

>>... will have a unique place in ham history as the first U.S. Amateur  
>>to become licensed without demonstrating proficiency in International Morse  
>>Code. I think a hearty congratulations to Robert is in order.

>

>Give me a break. Congratulations for NOT knowing something? If I'd come in  
>by this back door route I sure wouldn't be out advertising it in public. Let  
>the guy take his rightful place next to the mail-order Ph.D's.

>

AA6KX

In case anyone was wondering why an intelligent young man such as myself, one who has completed graduate level courses in EE, math, physics, and computer science doesn't have a ham license, ... and in fact would shed few tears (most days) if amateur radio was yanked off the airwaves, read that last statement a few times.

SMUG and ARROGANT don't begin to cover it.

I've been watching this newsgroup and just about decided my previous

encounters with Hams had been misleading. I was wrong. With people like Mr. Sawyer, it won't be long before the FCC has a hard time defending ham frequency allocations.

At least the FCC can apply the "reasoning" implied above and make the requirements for Ham licenses a little bit tighter.

So, I would recommend you grab a graduate level texts on EM fields, waveguides, non-linear optics, quantum mechanics, metallurgy, data compression, information theory, atmospheric models, plus a number of additional items which I can't recall off the top of my head.

Oh yeah, be prepared to demonstrate not only Morse code at 40 wpm, but also to touch type at 100+. I can, and since packet radio uses keyboards I can REQUIRE you to as well, using your "reasoning."

All e-mail replies will be forwarded to /dev/null unread.

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.. -----+-----
'/' Bear Giles      | Religion is a defense mechanism against
( ) bear@star1.fsl.noaa.gov | religious experiences.      -- Carl Jung
-----+-----
```

-----  
Date: 7 Apr 91 03:31:18 GMT  
From: sdd.hp.com!zaphod.mps.ohio-state.edu!magnus.acs.ohio-state.edu!csn!boulder!tiger!bear@ucsd.edu  
Subject: The first No-Code Ham is.....(DRUMROLL).....  
To: info-hams@ucsd.edu

In article <8819@gollum.twg.com> sawyer@twg.com (Bruce B. Sawyer) writes:  
>In article <11806.27f641a1@zeus.unomaha.edu> acmnews@zeus.unomaha.edu (Paul W. Schleck KD3FU) writes:

>  
>Give me a break. Congratulations for NOT knowing something? If I'd come in  
>by this back door route I sure wouldn't be out advertising it in public. Let  
>the guy take his rightful place next to the mail-order Ph.D's.  
> AA6KX

Amplification on my earlier post:

The purpose for Amateur Radio is (from the ARRL and originating legislation)

1) Education and encouragement of youth to pursue technical careers.

Towards that end a number of licenses were created, with additional priviledges granted for demonstrated knowledge. That is fairly standard --

you start people out with something simple, and as they learn, you give them more options.

Yet is it only Hams which are hung up on a person's license. I know NO private pilots who get harrassed by commerical pilots SOLELY because they lack a commercial license. I know no divers who get harrassed by dive instructors SOLELY because they lack instructor's certificates. I know of no drivers who get harrassed by professional drivers SOLELY because they lack a courier's license.

Yet Mr. Sawyer (and countless other Hams) feel entitled to DENIGRATE ALL HOLDERS OF "INFERIOR" LICENSES SOLELY BECAUSE THEY HOLD "SUPERIOR" LICENSES.

Mail order Ph.D. indeed!

There is a damn good reason for novice licenses -- there is absolutely no way on earth that a 12-year-old will be able to earn an advanced-extra Class license. Yet many hams seem to think otherwise.

## 2) Research and development of new technology.

A major area of research and development today is in packet radio. Packet radios are physically incapable of transmitting or receiving morse code. They have no speakers, no microphones, and no way of attaching them. (I am referring to a pure packet station, not one constructed from separate PCs and transceivers).

Yet many Hams feel a moral imperative to demand that all operators of these stations display knowledge which has absolutely no value to them.

Rather than recognize this, and the fact that these people's time would be better spent learning more about computers and digital transmissions, they demand training in obsolete technology.

How is this different than the Department of Motor Vehicles demanding you demonstrate HORSEMANSHIP before issuing an automobile license?

Finally, for someone interested in R&D a license is a tool, nothing else. Nobody will waste precious time to get a license "higher" than they require.

Not that you would know it after listening to some people....

## 3) Encouraging global understanding.

Talk to people in foreign countries! Learn they are just like us!

Since many countries have dropped Morse code requirements, and many American Hams appear to feel that this makes them morally superior, no, it's MORALLY SUPERIOR, with the right to make malicious attacks on others based solely on this, I fail to see how global understanding will be improved.

Perhaps this is a general "attack on ignorance." Fine, except there are a \_lot\_ more things which are more useful than Morse code. ANYTHING is more useful to someone with a packet station.

Or perhaps this is the same philosophy which leads to 1000W linear amps attached to CB radios. Or the "I have a GENERAL LICENSE, jerk, so stop whining when I blow away your puny little NOVICE signal! Get a GENERAL LICENSE yourself!" syndrome.

I realize that not all Hams are pompeous assholes. But there are enough of them (far more than I have found elsewhere) that I am signing off ham radio for good. It's just not worth the hassle.

But consider this carefully the next time the FCC threatens to restrict Ham activity. There are a lot of people who have good reason to dislike Hams, and it's not the occasional unexplained interference.

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.. -----+-----
`/\` Bear Giles      | Religion is a defense mechanism against
( )  bear@star1.fsl.noaa.gov | religious experiences.      -- Carl Jung
-----+-----
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Date: 5 Apr 91 14:31:55 GMT  
From: swrinde!cs.utexas.edu!csc.ti.com!ti-csl!tilde.csc.ti.com!axis!  
sqa.dsg.ti.com!edh@ucsd.edu  
To: info-hams@ucsd.edu

References <23994@well.sf.ca.us>, <21707@shlump.nac.dec.com>,  
<1458@rust.zso.dec.com>  
Subject : Re: Technician class (was No-Code Testing Questions)

```
>> What the FCC did is to CHANGE the requirements for the Technician class
>> license, so it's hard to imagine why they would want to create a new
>> name. The existing name ("Technician") will do just fine.
>> paul, nild
>
>My understanding is that there are in fact two Technician licenses:
> Technician no-code (new no-code license)
```

> Technician + code (same as old Technician)  
> So it seems reasonable to me that there should be two names. I've read that  
> they are simply called "Technician" and "Technician Plus Code".  
> | Pete Stoppani | stoppani@decwet.dec.com |

Paul is right. And in point of fact Pete, there are now four "types" of Technician license:

Current: Technician (no code, vhf-only)  
Current: Technician (plus CSCE for code, all vhf, plus Novice hf)  
Recent: Technician (all vhf, Novice hf, no CSCE (code as novice))  
Older: Technician (vhf, Novice hf, has General written credit)

The comment regarding names was for informal purposes only! The license is: Technician. Nothing less. Nothing more. (Time for .policy ??)

--

Ed Humphries Texas Instruments, Inc. 512-250-6894  
N5RCK Internet ed.humphries@hub.dsg.ti.com  
-. ..... -. -. -. -. Packet N5RCK@NA4M

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Date: 6 Apr 91 19:47:29 GMT  
From: swrindel@zaphod.mps.ohio-state.edu!pacific.mps.ohio-state.edu!linac!att!  
emory!wa4mei!ke4zv!gary@ucsd.edu  
To: info-hams@ucsd.edu

References <22149@yunexus.YorkU.CA>, <2971@ksr.com>,  
<1596@aupair.cs.athabascau.ca>  
Reply-To : gary@ke4zv.UUCP (Gary Coffman)  
Subject : Re: Antenna Matching Gedanken Experiment

In article <1596@aupair.cs.athabascau.ca> rwa@cs.athabascau.ca (Ross Alexander) writes:

> Lately there's been some talk in this group about antenna matching,  
> SWR values, and so on. Someone (sorry, didn't save the article)  
> mentioned that SWR didn't really matter, since the reverse wave  
> reflecting from a mismatched load just bounced off the transmitter as  
> well, and that worrying about getting a low SWR was really not very  
> important - all the power went out the antenna eventually. I believe  
> a book called 'Reflections' was mentioned as an authority.

This is almost correct. To get the signal bounced back to the load from the transmitter, the transmitter must be conjugate matched to the complex impedance appearing at it's output terminals. The reason there will be a complex impedance at the transmitter terminals is that \*any\* line that has a SWR other than 1:1 will act as a transmission line transformer. The load impedance will be transformed to something else at the transmitter end, and the line itself will represent a

reactance whose value will depend on it's length and the frequency of operation. This transformation also works in reverse of course so the reflected wave will now see a perfect match on the load end and be totally absorbed by the load. A transmatch or a transmitter with sufficient tuning range is needed to achieve conjugate match.

>Say one has a rig driving a chunk of (lossless) coax, said coax being  
>terminated in either a dead short or an open - the intent is to get  
>perfect reflection. OK, so the SWR is infinite. All the power stays  
>in the transmitter. Things get hot!

Very true because no real network can be designed to conjugate match infinity or zero to a real value. These are singularities that cannot be matched.

>Tying that back to the real world, it happens that for a while I was  
>running an antenna that loaded well on 80, 40, 20, & 10 but very  
>poorly on 15. The fans in my rig ran much harder when working on 15.  
>The heatsinks got hotter. Perhaps my rig didn't read that book...

More likely your tuning network couldn't conjugate match the impedance presented on 15 meters. This causes the transmitter to be operated off tune and, of course, it gets hot and doesn't transfer much power.

Gary KE4ZV

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Date: 7 Apr 91 02:29:53 GMT

From: usc!zaphod.mps.ohio-state.edu!unix.cis.pitt.edu!hpb.cis.pitt.edu!  
hpb@ucsd.edu

To: info-hams@ucsd.edu

References <11806.27f641a1@zeus.unomaha.edu>, <8819@gollum.twg.com>,  
<40583@netnews.upenn.edu>(

Subject : Re: Codeless = worthless? (was Re: The first No-Code Ham is)

This topic seems more appropriate to rec.radio.amateur.policy. I think the discussion should be moved there.

73,

Harry Bloomberg WA3TBL  
hpb@hpb.cis.pitt.edu or  
hpb@vms.cis.pitt.edu

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Date: 6 Apr 91 18:21:45 GMT

From: swrinde!zaphod.mps.ohio-state.edu!pacific.mps.ohio-state.edu!linac!att!  
emory!wa4mei!ke4zv!gary@ucsd.edu

To: info-hams@ucsd.edu

References <1991Mar30.174528.3952@ee.eng.ohio-state.edu>, <2659@ke4zv.UUCP>,  
<1991Apr3.201909.22363@grian.cps.altadena.ca.us>p

Reply-To : gary@ke4zv.UUCP (Gary Coffman)

Subject : Re: frequency standards

In article <1991Apr3.201909.22363@grian.cps.altadena.ca.us>  
morris@grian.cps.altadena.ca.us (Mike Morris) writes:

>

>I do not know how many stations use a rubidium standard as a transmitter  
>frequency control, but it may be worth checking.

Not many stations use a rubidium standard for their transmitters. The FCC  
required frequency tolerance for VHF TV transmitters is 1,000 hertz plus  
or minus of the assigned frequency. This is a looser tolerance than that  
of the color subcarrier (10 hz). Also quite a few stations do not operate  
on the standard channels. The Gannett station in Atlanta operates with  
a positive 10 khz offset from the standard channel.

Note that if you want to use the color subcarrier of a broadcast signal  
as a reference, you must be very careful to only sample the subcarrier  
during burst interval. The subcarrier is FM modulated to transmit hue  
information and AM modulated to transmit color saturation information.  
Only the burst is held to a constant amplitude and phase.

Some of you might be interested in knowing how we in the broadcast business  
make sure that we are transmitting a signal within the legal limits.

To monitor our transmitters, we use specialized counters called station  
monitors. The one at our Atlanta station is made by TFT. It has two counter  
displays, nixie tubes no less, that show the deviation in hertz from our  
assigned frequency of the visual and aural carriers. The TFT has a 10 Mhz  
master clock output that we compare to WWV to assure the accuracy of  
the counters. To measure our color subcarrier, we take raw subcarrier  
out of our station master sync generator and feed it to an antique HP  
frequency counter. The counter's master clock is calibrated against  
WWV in a similar manner to the TFT's clock. We use an R390A and a  
Tektronix 524 oscilloscope. If any of you have visited a broadcast  
plant, you've probably noticed that the engineering departments rarely  
throw away anything that works. The production department gets all the  
new gee whiz toys while engineering is usually using twenty year old  
equipment. It can be very frustrating to try to fix some new state of  
the art production toy with stone age test equipment. On the other hand,  
\*our\* equipment rarely breaks. :-)

Gary KE4ZV

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End of Info-Hams Digest

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